ACC NR: AT6012692

struction and the various test loops in it. The section headings are: I - Introduction. II. Operation of reactor. 1. Certain physical characteristics of the reactor. a) Fuel burnup. b) Efficiency of control valves, scram rods, and movable fuel assemblies. c) Fluxes of thermal and fast neutrons. 2. Control and protection system of the reactor. 3. Technological systems of the reactor. a) Cooling loop for fuel element assembly. b) Cooling loop for the reactor assembly blocks. c) Intermediate (second) cooling loop of reactor. d) Third cooling loop of reactor. e) Water purification system. 4. Fuel assembly operating conditions and conditions for the graphite stacking blocks. 5. Reloading operations. III. Operation of loop installations. Organization and performance of tests on fuel elements and materials. IV. Dosimetric control. Radiation shielding of reactor. The reactor has been in operation since 24 July 1964, and its power has been gradually increased from the initial 20 MW to 30 MW. The usual operation is at 25 MW. The reactor has 3 loop channels with 7 associated experimental channels. Various characteristics of the reactor at different power ratings are tabulated. Major contributions to the adjustment of the MR reactor were made by A. Ye. Alekseyev, B. A. Alekseyev, S. N. Begichev, A. B. Bugayenko, Yu. I. Kovalev, V. K. Lebedev, A. M. Rotankov, V. D. Rusov, N. V. Sarychev, Ye. S. Chernorotov, and Yu. A. Shikov. Orig. art. has: 13 figures and 6 tables.

SUB CODE: SUBM DATE: 00/ ORIG REF: 001

Card 2/2

CHERVYATSOVA, L. L.

Mbr., Inst. Physico-LChemistry im. L. V. Pisarshevskiy, Dept. Physico-Math. & Chemistry Sci., Ukr. Acad. Sci., -c1950-. Chemistry.

"Exchange of Phosphorous Isotopes in Systems H_3PO_2-H_3PO_3 and KH_2PO_2-KH_2PO_3 and the Tautomerism of Hypophosphorous Acid," Dok. AN, 75, No. 6, 1950.

CHERVYATSOVA, L. L., STRAZHESKO, D. N. and BRODSKIY, A. I.

"Exchange of Phosphorus Isotopes in the Systems H_3IO_2-H_3PO_3 and KH_2PO_2-KH_2IO_3, and the Tautomerism of Hypophosphorous Acid", Dokl AN SSSR, (Novaya Seriya), Vol. LXXV, No. 6, pp 823-825, 1950.

Chervyatsova, L. L.: Inst Phys Chem imeni L. V. Pisarzhevskiy Acad of Sci USSR
Brodskiy, A. I.: Corr Mem, Acad Sci USSR

SO: W-17845, 23 Apr 1951

ARKHANGEL'SKIY, B.Ye.; BOBIKOV, N.F.; CHERYAPIN, A.M.

Track with cast links and labyrinth sealings in joints. Trakt. i sel'khozmash. 30 no.7:9-11 Jl'60. (MIRA 13:10)

1. Lipetskiy traktornyy zavod (for Arkhangel'skiy). 2.Nauchno-issledovatel'skiy avtotraktornyy institut (for Cheryapin).
(Crawler tractors)

CHERVYATSOVA, L. L.

185T17

USSR/Chemistry - Tautomerism Mar 51
Theory of Resonance

"Reply to V. I. Stepanov," A. I. Brodskiy, L. L. Chervyatsova, G. P. Mikhlukhin, Inst Phys Chem imeni L. V. Pisarzhevskiy, Acad Sci Ukrainian SSR, Kiev

"Zhur Fiz Khim" Vol XXV, No 3, pp 380-382

Authors reply to B. I. Stepanov's criticism ("Zhur Fiz Khim" Vol XXIV, 1950, p 1,023) of their previous article ("Zhur Fiz Khim" Vol XXIV, 1950, p 968). On basis of their use of deuterium exchange to study toluene and derivs, Stepanov

185T17

USSR/Chemistry - Tautomerism Mar 51
(Contd)

accused authors of supporting theory of resonance by their denial of tautomerism in toluene (as proposed by P. P. Shorygin) and their proposal of "acid dissocn" scheme. Authors assert that their data proves absence of Shorygin's tautomerism in toluene, though not necessarily in its derives, and that there is no connection between concept of tautomerism and theory of resonance.

185T17

USSR/Chemistry - Resonance Aug 51

"Final Answer to B. I. Stepanov," A. I. Brodskiy, L. L. Chervyatsova, G. P. Miklukhin, Kiev

"Zhur Fiz Khim" Vol XXV, No 8, pp 994

Referring to Stepanov's communication in the same issue of "Zhur Fiz Khim," deny that they made the admissions imputed to them by Stepanov. State that Brodskiy admitted long ago the error made by him when he discussed in his textbook the nonadditivity of bond energies from the standpoint of the resonance theory; that Stepanov has nothing to do with

LC 190723

USSR/Chemistry - Resonance (Contd) Aug 51

the admission of this error; that tautomerism of toluene and those of its derivs studied by Brodskiy et al (2 nitro-derivs and mesitylene) definitely does not exist, contrary to Stepanov's opinion.

190723

CHERVYATSOVA, L. L.

CHERVYATSOVA, L.L.

185T2

USSR/Chemistry - Isotopes 21 Feb 51

"On the Possibility of Tautomerism in Toluene," A. I. Brodskiy, Corr Mem, Acad Sci USSR, L. L. Chervyatsova, G. P. Miklukhin, Inst Phys Chem imeni L. V. Pisarzhevskiy, Acad Sci Ukrainian SSR

"Dok Ak Nauk SSSR" Vol LXXVI, No 6, pp 843-845

Former work by authors demonstrated that toluene does not exchange hydrogen for deuterium of heavy water. Impossibility of its tautomeric transformation according to intermol ionization mech follows from this. Prepd $C_6H_5.CH_2D$ (I) by hydrolyzing $C_6H_5.CH_2MgCl$ with 6% D_2O, and 2,4,6-

185T2

USSR/Chemistry - Isotopes (Contd) 21 Feb 51

trideuterotoluene $C_6H_2D_3.CH_3$ (II) by treating $C_6H_5.CH_3$ with D_2O + DCl, diazotizing, and treating with CH_2O + NaOH. On oxidizing I and II with $KMnO_4$, it could be deduced from deuterium content of resulting benzoic acids that there was no tautomeric transformation in toluene, i.e., no transfer of deuterium between methyl group and phenyl group in either direction.

185T2

CHERVYATSOVA, L. L.

PA 254T94

USSR/Nuclear Physics - Isotopes 1 Jun 53
Chemistry - Isotopic Exchange

"Isotopic Exchange of Phosphorus and Sulfur in the Ethyl Esters of Phosphoric and Sulfuric Acids," A. I. Brodskiy, Corr Mem, Acad Sci USSR, and L. L. Chervyatsova, Inst of Phys Chemistry imeni L. V. Pisarzhevskiy, Acad Sci Ukrainian SSR

DAN SSSR, Vol 90, No 4, pp 545-547

Using tagged P and S, demonstrated that there is little or no exchange of P atoms between $P(OC_2H_5)_2$ and $C_2H_5P(O)(OC_2H_5)_2$, and no exchange of S in the sulfuric acid esters.

254T94

CHERVYATSOVA, L. L.

PA 254T96

USSR/Nuclear Physics - Heavy Water 1 Jun 53
Chemistry - Isotopes

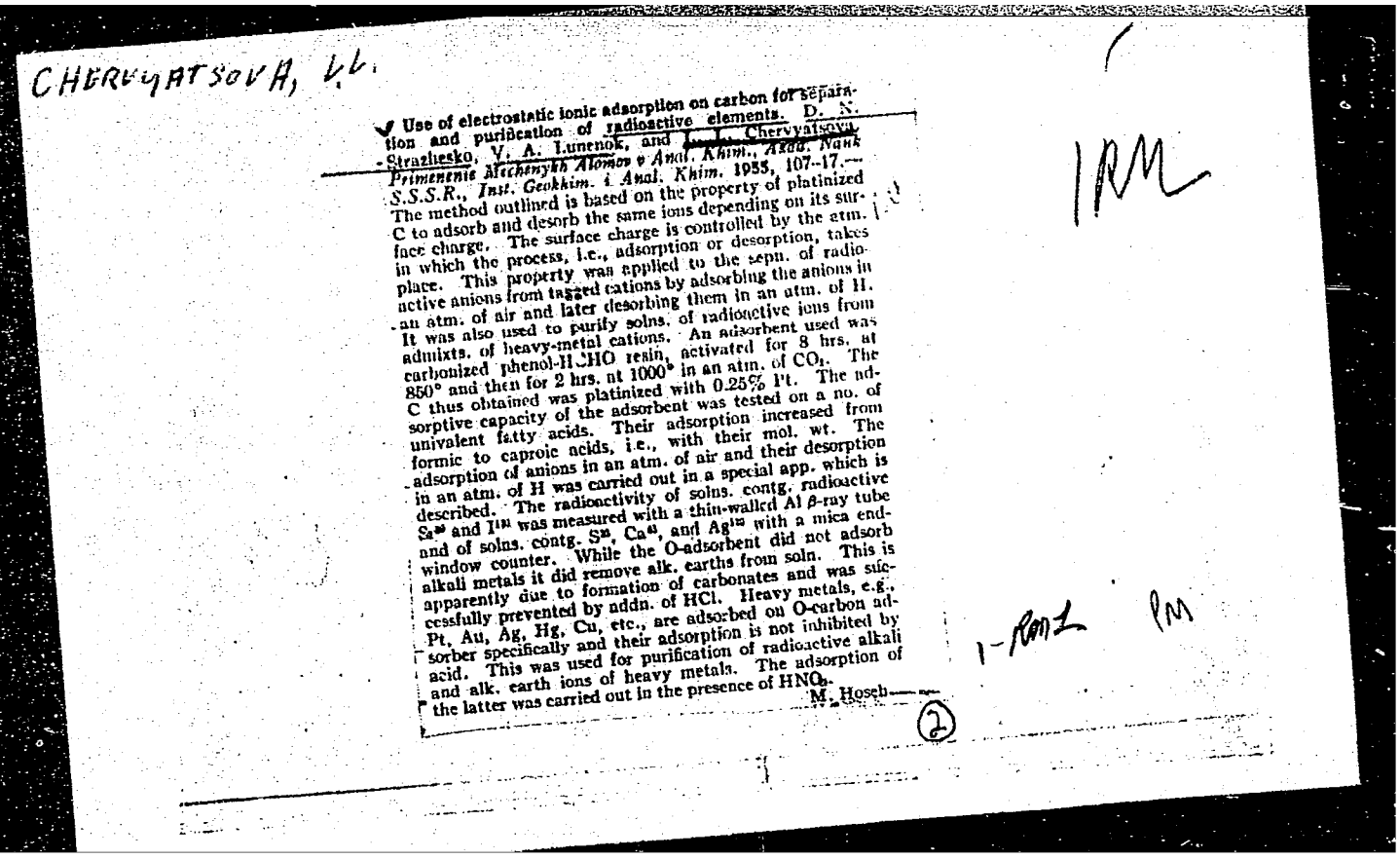
"The Influence of Activated Carbon on the Tautomeric Conversion of Acetone," D. N. Strazhesko, L. L. Chervyatsova, Inst of Phys Chemistry imeni L. V. Pisarzhevskiy, Acad Sci Ukr SSR

DAN SSSR, Vol 90, No 4, pp 607-610

In the absence of a catalyst, there is only 3-4% of exchange between heavy water and acetone in glass ampules, even at elevated temps. At 0° there is practically no exchange between heavy water and

254T96

acetone in the presence of hydrogenated carbon, although at 80-85° there is 20-25%. Presented by Acad A. N. Frumkin 31 Mar 53.



CHERVYATSOVA, L.L.

Use of electrostatic ionic adsorption on carbon for separation and purification of radioactive elements. D. N. Strazhesko, V. A. Lunenok, and L. L. Chervyatsova. *Primenenie Aktivnykh Uglei v Anal. Khim., Akad. Nauk S.S.S.R., Inst. Geokhim. i Anal. Khim.* 1955, 107–17.—The method outlined is based on the property of platinized C to adsorb and desorb the same ions depending on its surface charge. The surface charge is controlled by the atm. in which the process, i.e., adsorption or desorption, takes place. This property was applied to the sepn. of radioactive anions from tagged cations by adsorbing the anions in an atm. of air and later desorbing them in an atm. of H. It was also used to purify solns. of radioactive ions from admixts. of heavy-metal cations. An adsorbent used was carbonized phenol-HCHO resin, activated for 8 hrs. at 850° and then for 2 hrs. at 1000° in an atm. of CO_2. The C thus obtained was platinized with 0.25% Pt. The adsorptive capacity of the adsorbent was tested on a no. of univalent fatty acids. Their adsorption increased from formic to caproic acids, i.e., with their mol. wt. The adsorption of anions in an atm. of air and their desorption in an atm. of H was carried out in a special app. which is described. The radioactivity of solns. contg. radioactive Sr^{90} and I^{131} was measured with a thin-walled Al β-ray tube and of solns. contg. S^{35}, Ca^{45}, and Ag^{110} with a mica end-window counter. While the O-adsorbent did not adsorb alkali metals it did remove alk. earths from soln. This is apparently due to formation of carbonates and was successfully prevented by addn. of HCl. Heavy metals, e.g., Pt, Au, Ag, Hg, Cu, etc., are adsorbed on O-carbon adsorber specifically and their adsorption is not inhibited by acid. This was used for purification of radioactive alkali and alk. earth ions of heavy metals. The adsorption of the latter was carried out in the presence of HNO_3.

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(2)

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1-Rm 2 PM

CHERVYATSOVA, L.L.

AUTHORS: Strazhesko, D. N., Tarkovskaya, I. A., Chervyatsova, L. L. 78-1-20/43

TITLE: Investigation of the Mechanism of Adsorption of the Salts by Oxidized Coal With the Application of Radioactive Indicators (Issledovaniye mekhanizma sorbtsii soley okislennym uglem s primeneniyem radioaktivnykh indikatorov).

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 1, pp. 109-114 (USSR).

ABSTRACT: There is no uniform opinion in literature on the principal problem of the mechanism of selective adsorption of the cations by oxidized coal (references 1 to 16). The importance of the mere electrochemical factor in this complicated phenomenon remains largely not clear (reference 18). This is mainly due to the fact that the values of adsorption were directly determined. The authors for this reasons set themselves the problem to apply the method referred to in the title, by which, as is known, (reference 19, 20), the smallest quantities of adsorbed ions can be determined immediately and with sufficient accuracy. Preliminary results on the cation-adsorption of rubidium and calcium (with Rb^{86} and Ca^{45}) on ashless oxidized coal from acqueous solutions of their chlorine salts or from water-mixtures with organic solvents:

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78-1-20/43

Investigation of the Mechanism of Adsorption of the Salts by Oxidized Coal With the Application of Radioactive Indicators.

Methyl- and isopropyl alcohol, acetone, dioxane, and phenol, as well as from non-acqueous media are given in the present report. An experimental part with the data on the test methods follows. Test results and their explanation. The results are shown in table I to 3. It is shown in table I that in spite of material differences in quantity, one and the same rule was observed governing both cases (Rb and Ca): the value of adsorption of the salt cations was not equivalent to the quantity of hydrogen ions passed over into the solution, but to the sum $i_{H+} + a_{Cl-}$, in which case i_{H+} denotes the quantity of hydrogen ions passed over into the solution after the adsorption and a_{Cl-} the value of adsorption of the salt anions (according to Fol'dards' method). It remained constant within the whole range pf concentration (figure 1). The authors hence concluded that the salt-adsorption by oxidized coal from acqueous solutions is an ordinary exchange of the cations of the dissolved electrolytic substance against the hydrogen ions of the outer coating (obkladka) of a double layer of the adsorbent. This exchange is complicated by a partial absorption of the acid produced in the solution on the non-oxidized portions of the coal surface. The concerned cation-adsorption is entirely reversible (see table 2). Already by adding a relatively small quantity of organic solvent to the

Card 2/3

SOV-21-58-8-13/27

AUTHORS: Skripnik, Z.D., Chervyatsova, L.L., and Yankovskaya, G.F.

TITLE: Hydrolysis of Acetic Ethyl Ester in the Presence of Oxidized Carbon (Gidroliz uksusnoetilovogo efira v prisutstvii okislennogo uglya)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 8, pp 853-856 (USSR)

ABSTRACT: The authors show that oxidized carbon, in comparison with the considerably more bulky carboxylic cation-exchange resin of the KB-4 type, is a good catalyst for the hydrolysis reaction of acetic ethyl ester. On the basis of the results of their investigation and previous studies conducted by I.A. Tarkovskaya (Ref. 16), D.N. Strazhesko (Ref. 1), conclusion was drawn that the catalytic activity of oxidized carbon, as well as its capacity for cation exchange in an acid medium, is due to hydrogen ions. Their connection with the adsorbent surface, according to the concepts of Verwey and de Boer (Ref. 17), and A. Frumkin (Ref. 18), is of electrochemical nature. The authors express an assumption that oxidized carbon can apparently serve as a sufficiently effective catalyst for other reactions of the acid type,

Card 1/2

Hydrolysis of Acetic Ethyl Ester in the Presence of Oxidized Carbon

usually accelerated by dissolved strong acids or cationites of the sulfoacid type. This investigation was carried out under the guidance of Professor D.N. Strazhesko.
There is 1 graph and 19 references, 7 of which are Soviet, 4 German, 2 English, 3 American, 1 Australian, and 2 Dutch.

ASSOCIATION: Institut fizicheskoy khimii AN UkrSSR im. L.V. Pisarzhevskogo (Institute of Physical Chemistry of the AS UkrSSR imeni L.V. Pisarzhevskiy); Kiyevskiy meditsinskiy institut im. O.O. Bogomol'tsa (Kiyev Medical Institute imeni O.O. Bogomolets)

PRESENTED: By Member of the AS UkrSSR, A.I. Brodskiy

SUBMITTED: March 6, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Acetic ethyl ester--Hydrolysis 2. Carbon--Applications

SOV/69-21-3-3/25

5(4)

AUTHORS: Glazman, Yu.M., Strazhesko, D.N., Zhel'vis, Ye.F., Chervyatsova, L.L.

TITLE: Changes in the Adsorption of Potential-Determining Ions During Coagulation of Lyophobic Sols by Indifferent Electrolytes

PERIODICAL: Kolloidnyy zhurnal, 1959, Vol XXI, Nr 3, pp 263-271 (USSR)

ABSTRACT: The present investigation concerns the role of the potential-determining ions during the coagulation process of lyophobic sols, caused by indifferent electrolytes with coagulating ions of different valency. Objects of the investigation were the radioactive sols AgJ, HgS and As_2S_3 (negatively charged) and $Fe(OH)_3$ (positively charged). By comparing the magnitudes of the activities of the intermicellar liquids of the investigated sols with the activities of the corresponding solutions after coagulation,

Card 1/3

Changes in the Adsorption of Potential-Determining Ions During Coagulation of Lyophobic Sols by Indifferent Electrolytes

a marked additional adsorption of potential-determining ions could be stated in each case. The desorption of iron ions, which could be observed during the coagulation of the $Fe(OH)_3$ sol, was due to secondary factors. Coagulation of lyophobic sols by indifferent electrolytes, therefore, affects not only the external but also the internal sheath of the colloid particle double layer. The changes observed thereby cannot be explained from the standpoint of a purely electrostatic compression of the double layer. There is a quantitative disparity between this conception and the obtained data. The authors conclude by recommending the further study of the coagulation theory, which is to consider the quantitative effect of electrolytes on the surface potential of colloid particles. Towards the end of the article, the authors mention the Soviet scientists V.A. Kargin and A.I. Rabinovich in connection with certain effects produced by poten-

Changes in the Adsorption of Potential-Determining Ions During Coagulation of Lyophobic Sols by Indifferent Electrolytes

tial-determining ions during the coagulation process. There are 3 tables and 50 references, 24 of which are Soviet, 13 German, 10 English and 3 French.

ASSOCIATION: Tekhnologicheskiy institut legkoy promyshlennosti (Technological Institute of Light Industry)
Institut fizicheskoy khimii AN USSR im. L.V. Pisarzhevskogo, Kiyev (Institute of Physical Chemistry of the AS of the UkrSSR imeni L.V. Pisarzhevskiy, Kiyev)

SUBMITTED: 26 February 1958

CHERVYATSOVA, L.L.

Pinacol-pinacolone rearrangement in the presence of synthetic cation-exchange in the presence of synthetic cation-exchange resins. Ukr. khim.zhur. 27 no.6:788-793 '61. (MIRA 14:11)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo AN USSR.
(Pinacolone)
(Ion-exchange resins)

KORNEV, K.A., glav. red.; SHEVLYAKOV, A.S., red.; CHERVYATSOVA, L.L., red.; SMETANKINA, N.P., red.; YEGOROV, Yu.P., red.; ROMANKEVICH, M.Ya., red.; KUZNETSOVA, V.P., red.; PAZENKO, Z.N., red.; KACHAN, A.A., red.; VOYTSEKHOVSKIY, R.V., red.; GREKOV, A.P., red.; DUMANSKIY, I.A., red.; AVDAKOVA, I.L., red.; VYSOTSKIY, Z.Z., red.; GUMENYUK, V.S., red.; MEL'NIK, A.F., red.

[Synthesis and physical chemistry of polymers; articles on the results of scientific research] Sintez i fiziko-khimiia polimerov; sbornik statei po rezul'tatam nauchno-issledovatel'skikh rabot. Kiev, Naukova dumka, 1964. 171 p. (MIRA 17:11)

1. Akademiya nauk URSR, Kiev. Institut khimii vysokomolekulyarnykh soyedineniy. 2. Institut fizicheskoy khimii im. L.V. Pisarzhevskogo AN USSR (for Vysotskiy). 3. Institut khimii vysokomolekulyarnykh soyedineniy AN USSR (for Romankevich, Chervyatsova, Voytsekhovskiy).

L 25772-65 EWT(m)/EPF(c)/EWG(v)/T/EWP(t)/EPR Pc-4/Pe-5/Pr-4/Ps-4/Pl-4

45

ACCESSION NR: AT5002666 S/0000/64/000/000/0109/0114

AUTHOR: Gaye, N. P.; Kachan, A. A.; Kornev, K. A.; Kulik, N. V.; Chervyatsova, L. L.

TITLE: Study of the kinetics of the photochemical graft copolymerization of acrylonitrile to Kapron fiber

SOURCE: AN UkrSSR. Institut khimii vysokomolekulyarnykh soyedineniy. Sintez i fiziko-khimiya polimerov; sbornik statey po rezul'tatam nauchno-issledovatel'skikh rabot (Synthesis and physical chemistry of polymers; collection of articles on the results of scientific research work). Kiev, Naukova dumka, 1964, 109-114

TOPIC TAGS: graft copolymerization, photochemical copolymerization, copolymerization kinetics, acrylonitrile copolymer, polycaprolactam, Kapron fiber, free radical

ABSTRACT: Experiments on the photochemically initiated graft copolymerization of acrylonitrile to polycaprolactam (Kapron) fiber were carried out to study the kinetics and energetic efficiency of the process. The polymerization was studied at 20-60C in the vapor phase under UV irradiation from a mercury lamp and under monochromatic radiations at λ=253.7 and 365 mμ. The graft polymer contained not more than 2% homopolymer. The reaction rate decreased with reaction time and with an increase in temperature, and increased linearly with the square root of the

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L 25772-65

ACCESSION NR: AT5002666

light intensity. The quantum yield of the process, calculated per amount of grafted acrylonitrile molecules, was shown to equal 1 for the wavelength 253.7 mμ and 2.5 for 365 mμ. The results indicate that irradiation at both effective wavelengths involves mainly cleavage of C-N bonds and formation of free radicals having the structure $NH\text{-}CH_2\text{-}CH_2\text{-}$ and CH_2CH_2CO. Orig. art. has: 2 figures and 5 formulas.

ASSOCIATION: Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR (High polymer chemistry institute, AN Ukr.SSR)

SUBMITTED: 22Jun64 ENCL: 00 SUB CODE: GC, MT

NO REF SOV: 005 OTHER: 011

Card 2/3

GNYP, N.P. [Hnyp, N.P.]; KULIK, N.V. [Kulyk, N.V.]; KACHAN, A.A., kand. khim. nauk; CHERVYATSOVA, L.L. [Cherv'iatsova, I.L.]

Lightproofing of polyamides by means of graft copolymerization. Khim. prom. no.4:9-10 O-D '64. (MIRA 18:3)

L 51868-65 EWT(m)/EPF(c)/EWG(v)/EPR/EWP(j)/T Pc-4/Pe-5/Pr-4/Ps-4/Pi-4 RPL
RWH/WW/GS/RM

ACCESSION NR: AT5002667 S/0000/64/000/000/0115/0121

AUTHOR: Gnyp, N. P.; Kachan, A. A.; Kornev, K. A.; Chervyatova, L. L.

TITLE: A study of the kinetics of the photochemical aftereffect during graft copolymerization of acrylonitrile onto a caprone fiber

SOURCE: AN UkrSSR. Institut khimii vysokomolekulyarnykh soyedineniy. Sintez i fiziko-khimiya polimerov; sbornik statey po rezul'tatam nauchno-issledovatel'skikh rabot (Synthesis and physical chemistry of polymers; collection of articles on the results of scientific research work). Kiev, Naukova dumka, 1964, 115-121

TOPIC TAGS: acrylonitrile copolymer, caprone fiber, vapor phase grafting, ultraviolet light initiation, photochemical aftereffect, rate constant, activation energy, polymerization kinetics

ABSTRACT: Continuing previous experiments, which established that graft copolymerization of acrylonitrile to a caprone fiber can be initiated by quanta of ultraviolet light, the authors analyzed the kinetics of the photochemical aftereffect in vapor-phase grafting of acrylonitrile. They evolved a kinetic formula

$$x = \frac{2,3K_pC_M}{K_0} \lg(K_0Ct + 1),$$

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L 51868-65

ACCESSION NR: AT5002667

which makes it possible to calculate the ratio of the rate constants at 20, 40 or 60C. In the above equation, x = amount of grafted acrylonitrile at time t, K_p and K_o = rate constants for chain growth and termination, C_M = concentration of monomer, and C = initial concentration of free radicals. Activation energies were calculated as 5.7 (apparent), 4.6 (chain growth) and 2.2 (chain termination) kcal/mol., respectively. Orig. art. has: 4 figures and 12 formulas.

ASSOCIATION: Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR (Institute of the Chemistry of High Polymers, AN UkrSSR)

SUBMITTED: 22Jun64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 004 OTHER: 000

Card 2/2

ACCESSION NR: AP4012591 S/0021/64/000/002/0224/0226

AUTHOR: Kornyev, K. A. (Corresponding member); Gny*p, N. P.; Kachan, O. O.; Chervyatsova, L. L.

TITLE: Photochemical initiation of graft copolymerization of acrylonitrile to kapron fiber

SOURCE: AN UkrRSR. Dopovidi, no. 2, 1964, 224-226

TOPIC TAGS: kapron, acrylonitrile, nylon, graft copolymer, polyamide fiber copolymer, polycaprolactain

ABSTRACT: Photochemically initiated graft copolymerization was carried out with acrylonitrile in the vapor phase to avoid formation of the homopolymer. The fiber was irradiated with unfiltered light of a mercury-quartz lamp at a distance of 20 cm for 1 hour at 20°C. It was found that the grafting continued after the irradiation was discontinued. A kinetic equation derived for the graft copolymerization was used to calculate the activation energies of the process and of the growth and breaking of the chains. Orig. art. has 1 formula and 1 figure.

Card 1/2

ACCESSION NR: AP4012591

ASSOCIATION: Insty*tut khimiyi polimeriv i monomeriv AN UkrRSR (Institute of the Chemistry of Polymers and Monomers, AN UkrRSR)

SUBMITTED: 21Jun63 DATE ACQ: 03Mar64 ENCL: 00

SUB CODE: CH NO REF SOV: 002 OTHER: 014

Card 2/2

L 25238-65 EWG(j)/EWG(r)/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(j)/T/EWA(h)/EWA(1)
Pc-4/Pe-5/Pr-4/Ps-4/Pu-4/Peb RPL GO/RM/WW

ACCESSION NR: AP5002750 S/0073/64/030/012/1318/1321

AUTHOR: Kornev, K.A.; Kachan, A.A.; Chervyatsova, L.L.; Polak, L.S.; Mertvichenko, Ye. F.; Demchenko, S.S.

TITLE: Kinetics of the radiochemical graft copolymerization of acrylonitrile with capron fiber

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 30, no. 12, 1964, 1319-1321

TOPIC TAGS: vapor seeding copolymerization, capron fiber, acrylonitrile vapor, copolymerization constant, radiation polymerization, graft copolymer, polyacrylonitrile

ABSTRACT: Degreased, drawn, capron fiber was irradiated (Co^{60} source, 1600 curies, 100 rad/sec, 10^{-3} mm Hg, room temperature, 0.25 Mrad) and exposed to an acrylonitrile vapor at 80 mm pressure in a study of the kinetics of vapor seeding graft copolymerization which does not involve formation of a homopolymer. Graphs illustrate the effects of temperature (22-60C, 0-24 hrs), radiation dosage (0-20 Mrad) and monomer vapor pressure (30-80 mm Hg, 0-10 hrs). The authors calculated constants for the rate of chain growth, rate of chain disruption, the apparent activation energy (1.9 Kcal/mol), activation energy of chain growth and chain disruption, the average distance between initiation centers (120 A) and the average lengths of chains. An increase in monomer

Card 1/2

L 25238-65

ACCESSION NR: AP5002750

vapor pressure led to an increase in the quantity of copolymerized polyacrylonitrile. An increase in temperature decreased the amount of copolymerization, while an increase in radiation dosage above 2 Mrad had little effect. "The authors are indebted to A. Ya. Rozovskiy for participating in the evaluation of the results". Orig. art. has: 4 figures and 1 formula.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (High polymer institute, AN SSSR)

SUBMITTED: 25Dec63 ENCL: 00 SUB CODE: OC

NO REF SOV: 003 OTHER: 005

Card 2/2

L 23064-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) Pc-4/Pr-4/Pi-4/Peb CG/RM

ACCESSION NR: AP5004249 S/0021/65/000/001/0064/0066

AUTHOR: Kostyl'ova, Z. O. (Kostyleva, Z. A.); Kornyev, K. A. (Kornev, K. A.) (Corresponding member UkrSSR); Kachan, O. O. (Kachan, A. A.); Chervyatsova, L.L.; Pazenko, Z. N. (Pazenko, Z. N.)

TITLE: The radiation chemical linking of polystyrene by linking agents

SOURCE: AN UkrRSR. Dopovidi, no. 1, 1965, 64-66

TOPIC TAGS: triallyl isocyanurate, irradiation in air, elastic state cross linking

ABSTRACT: The efficacy of using triallyl isocyanurate (TAIC) in radiational chemical cross linking of polystyrene was established. It is shown that polystyrene is practically completely linked on adding 20 p.c. TAIC and irradiating in air with a dose of 50 megarads. The cross-linked polymer retains a highly elastic state up to a temperature of 300°C. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Instytut khimiyi vysokomolekulyarnykh spoluk (Institute of Chemistry of High Molecular Compounds)

Card 1/2

L 23064-65

ACCESSION NR: AP5004249 0

SUBMITTED: 26Mar64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 005 OTHER: 002

Card 2/2

L 27198-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) Pc-4/Pr-4/ Peb/Pu-4 GG/RM

ACCESSION NR: AP5003841 S/0190/65/007/001/0183/0183

AUTHORS: Kaurkova, G. K.; Kachan, A. A.; Kornev, K. A.; Chervyatsova, L. L.

TITLE: Radiation chemical cross-linking of polyethylene

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 1, 1965, 183

TOPIC TAGS: polyethylene, radiation polymerization, gamma radiation, sulfur monochloride, polymer, polyolefin

ABSTRACT: Starting with the premise that radiation chemical cross-linking of polyethylene takes place at relatively large doses of γ-radiation (up to 200 Mrad), the authors show that by using 5-10% sulfur monochloride a practically complete cross-linking (up to 99%) of polyethylene is attained with doses of 2.1 Mrad. The sulfur monochloride was introduced into the polymer from the vapor phase, and the irradiation was performed at room temperature with doses of 100 rad/second. The modified polyethylene turned out to be approximately 18% stronger than the ordinary polymer at room temperature. With a rise in temperature, the difference between the two polyolefins increased as shown in Fig. 1 on the Enclosure. It was also found that during the cross-linking process the atoms of sulfur from

Card 1/3

L 27198-65
ACCESSION NR: AP5003841

S_2Cl_2 embed themselves into the high-molecular weight compound, apparently forming bonds (according to ultraviolet absorption spectra) of monosulfidic character between macromolecular chains. The radiation chemical yield of the process was 1.25×10^3. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 03Aug64 ENCL: 01 SUB CODE: OC, GC

NO REF SOV: 000 OTHER: 000

Card 2/3

L 27198-65

ACCESSION NR: AP5003841

ENCLOSURE: 01

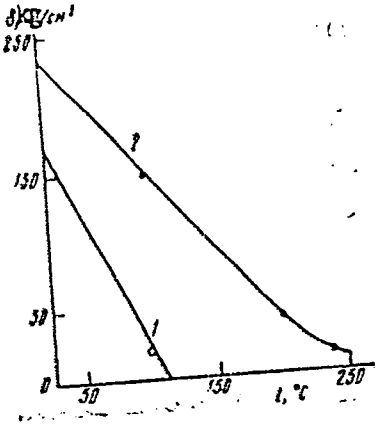

Fig. 1. Tensile strength of original polyethylene films (1) and of polyethylene films cross-linked in the presence of 10% S_2Cl_2 with γ-rays with a 0.1 Mrad dose (2) in relation to temperature

Card 3/3

KAURKOVA, O.K. [Kaurkova, H.K.]; KACHAN, A.A., kand.khim.nauk; KORNIEV, K.A. [Korniev, K.A.], doktor khim.nauk; CHERVYATSOVA, L.L. [Cherv'iatsova, L.L.], kand.khim.nauk

Using the method of photochemical cross-linking in the presence of sulfur monochloride to increase the resistance to heat of polyethylene. Khim.prom. [Ukr.] no.2:8-9 Apr-Je '65. (MIRA 18:6)

KAURKOVA, G.K. [Kaurkova, H.K.]; KACHAN, O.O.; KORNEV, K.A. [Kornev, K.A.]; CHERVYATSOVA, L.L.

Radiation-induced chemical cross-linking of polyolefins in the presence of sulfur monochloride. Dop. AN URSR no.9:1183-1186 '65. (MIRA 18:9)

1. Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR.
2. Chlen-korrespondent AN UkrSSR (for Kornev).

L 16011-66 EWP(j)/EWT(m)/T/EWP(v) RM/WW/GS
ACC NR: AT6006235 (A) SOURCE CODE: UR/0000/65/000/000/0005/0008

AUTHOR: Gnyp, N. P.; Kachan, A. A.; Kulik, N. V.; Chervyatsova, L. L.

ORG: Institute of Chemistry of High Molecular Compounds, AN UkrSSR, Kiev (Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR)

TITLE: Nonadditivity of properties of the constituents of a graft polymer

SOURCE: AN UkrSSR. Modifikatsiya svoystv polimerov i polimernykh materialov (Modification of the properties of polymers and polymeric materials). Kiev, Naukova dumka, 1965, 5-8

TOPIC TAGS: synthetic fiber, graft copolymer, polyacrylonitrile, polyvinyl acetate adhesion, caprone

ABSTRACT: The effect of a grafted layer on the properties of modified caprone fiber was investigated. The properties of graft copolymers were studied by determining the dyeability and adhesiveness of the fibers. Experiments with an acid dye (acid blue) and a basic dye (fuchsin) showed that caprone fiber containing 6% of grafted polyacrylonitrile increases the sorption of acid blue by a factor of 1.5, and that

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L 16011-66
ACC NR: AT6006235

3

of fuchsin, by a factor of 4 as compared to the unmodified fiber. Similar results were obtained with fiber modified with polyvinyl acetate. Thus, the dyeability depends little on the nature of the grafted layer or on the type of dye, indicating that the properties of the modified polymer are not determined by the properties of the substrate and of the grafted layer. A similar picture was obtained in a study of the adhesion of caprone fibers to grafted polydivinyl, poly-2-methyl-5-vinylpyridine, and polyisoprene. In the case of SKB rubber the samples showed a higher adhesion after grafting, but in the case of NK-1 natural rubber the adhesion of caprone cord not only did not increase, but decreased, and the properties of the modified caprone fiber were practically independent of the chemical nature of the grafted layer. It is suggested that physical factors associated with a change in the structure of the "substrate" were strongly manifested in the case of natural rubber. Thus, the nonadditivity of the properties of the grafted layer and base polymer is displayed in the dyeability and adhesiveness to natural rubber. Orig. art. has: 1 figure, 3 tables.

SUB CODE: 07/ SUBM DATE: 06Oct65/ ORIG REF: 002/ OTH REF: 001

Card 2/2

L 26037-66 EWT(m)/EWP(j)/EWA(h)/T/EWA(l) IJP(c) RM
ACC NR: AP5024785 SOURCE CODE: UR/0021/65/000/009/1183/1186

AUTHOR: Kaurkova, H. K.--Kaurkova, G.K.; Kachan, O. O.; Kornyev, K. A.--Kornev, K. A. (Corresponding member AN UkrSSR); Chervyatsova, L. L. 13 6

ORG: Institute of Macromolecular Chemistry, AN UkrSSR (Instytut khimiyi vysokomolekulyarnykh spoluk AN UkrSSR)

TITLE: Radiation-chemical linking of polyolefins in the presence of sulfur monochloride 17

SOURCE: AN UkrRSR. Dopovidi, no. 9, 1965, 1183-1186

TOPIC TAGS: irradiation, conjugated polyolefin hydrocarbon, sulfur, chemical identification, synthetic material

ABSTRACT: A study of radiation-chemical linking was made with samples of non-stabilized polyethylene 60 μ thick, and with polypropylene fiber 180 μ in diameter subjected to treatment by S_2Cl_2 in the vapor phase under gamma irradiation from Co^{60} produced by an apparatus providing for radiation doses of $\leq$100 rad/sec. After reaction, the samples were vacuum-treated in an exsiccator and tested in a

Card 1/3

dynamometer at various temperatures. Practically complete linking (98-99%) was effected by 5-10% of the S_2Cl_2 during the irradiation of polyethylene with a dose of 0.1 Mrad and of polypropylene with a dose of 1 Mrad. The radiation-chemical yield of the process was 1.25×10^3 for polyethylene. The number of crosslinkings in one polyethylene molecule was determined as 2.5 by recalculating the data of chemical analysis. The linking resulted in an increase of mechanical strength of the polyolefins, which was especially noticeable at elevated temperatures. At 150C, the tensile strength of modified polyethylene was 83 and polypropylene 210 kg/cm^2, whereas the initial polypropylene at the same temperature failed at 71 kg/cm^2, and the initial polyethylene melted at 114C. The mechanism of linking of polyethylene in the presence of S_2Cl_2 is a complex one. By comparing with the literature (R. G. Sowden, N. Davidson, J. Amer. Chem. Soc. 73, 1291, 1956), it can be assumed that the radical S-Cl was formed under the gamma irradiation and that the linking of polyethylene occurred according to the scheme described by G. A. R. Brandt et al. (J. Amer. Chem. Soc., 2192, 1952):

$$\cdot SCl + S_2Cl_2 \rightarrow \cdot S\,SCl + Cl-S-Cl$$

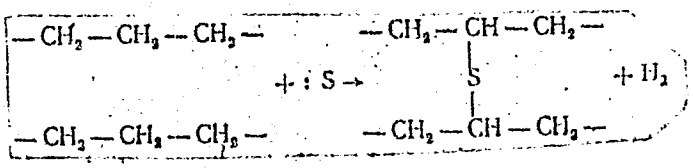
$$\cdot S-SCl \rightarrow \cdot SCl + :S$$

$$\cdot SCl + S_2Cl_2 \rightarrow \cdot S-SCl + Cl-S-Cl$$

L 26037-66

ACC NR: AP5024785

The study of various possible reactions on the formation of radicals with polyethylene molecules suggests that the most probable one is the following:



Orig. art. has: 2 formulas, 2 tables and 1 fig.

SUB CODE: 07,11/ SUBM DATE: 17Aug64/ ORIG REF: 001/ OTH REF: 009

Card 3/3

L 42974-66 EWT(m)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) GG/RM/GS
ACC NR: AT6006242 (A) SOURCE CODE: UR/0000/65/000/000/0037/0042

AUTHOR: Dubrova, L. N.; Kachan, A. A.; Loktionova, R. A.; Chervyatsova, L. L.; Kornev, K. A. (Doctor of chemical sciences)

ORG: Institute of Chemistry of High Molecular Compounds, AN UkrSSR, Kiev, (Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR)

TITLE: Radiochemical polymerization of allyl esters of certain N-methylol derivatives of acid amides

SOURCE: AN UkrSSR. Modifikatsiya svoystv polimerov i polimernykh materialov (Modification of the properties of polymers and polymeric materials). Kiev, Naukova dumka, 1965, 37-42

TOPIC TAGS: radiation polymerization, organic amide, IR spectrum

ABSTRACT: Allyl esters of N-methylol derivatives of acetamide, chloroacetamide, and benzamide were polymerized both in the pure state and in benzene and methanol solutions by irradiation with Co^{60} gamma rays. Formation of the polymer was determined visually and also by means of viscosity and IR spectral measurements. In benzene

Card 1/2

L 42974-66

ACC NR: AT6006242

and methanol, the effectiveness of the irradiation was one order of magnitude greater than in the bulk. IR spectra showed that even when doses of 1500 Mrad are used, no appreciable degradation of the allyl monomers takes place. The dependence of the content of allyl groups on the irradiation dose was determined. The decrease in the content of allyl groups observed indicates that the polymerization takes place at the double bonds. Orig. art. has: 2 figures, 3 tables.

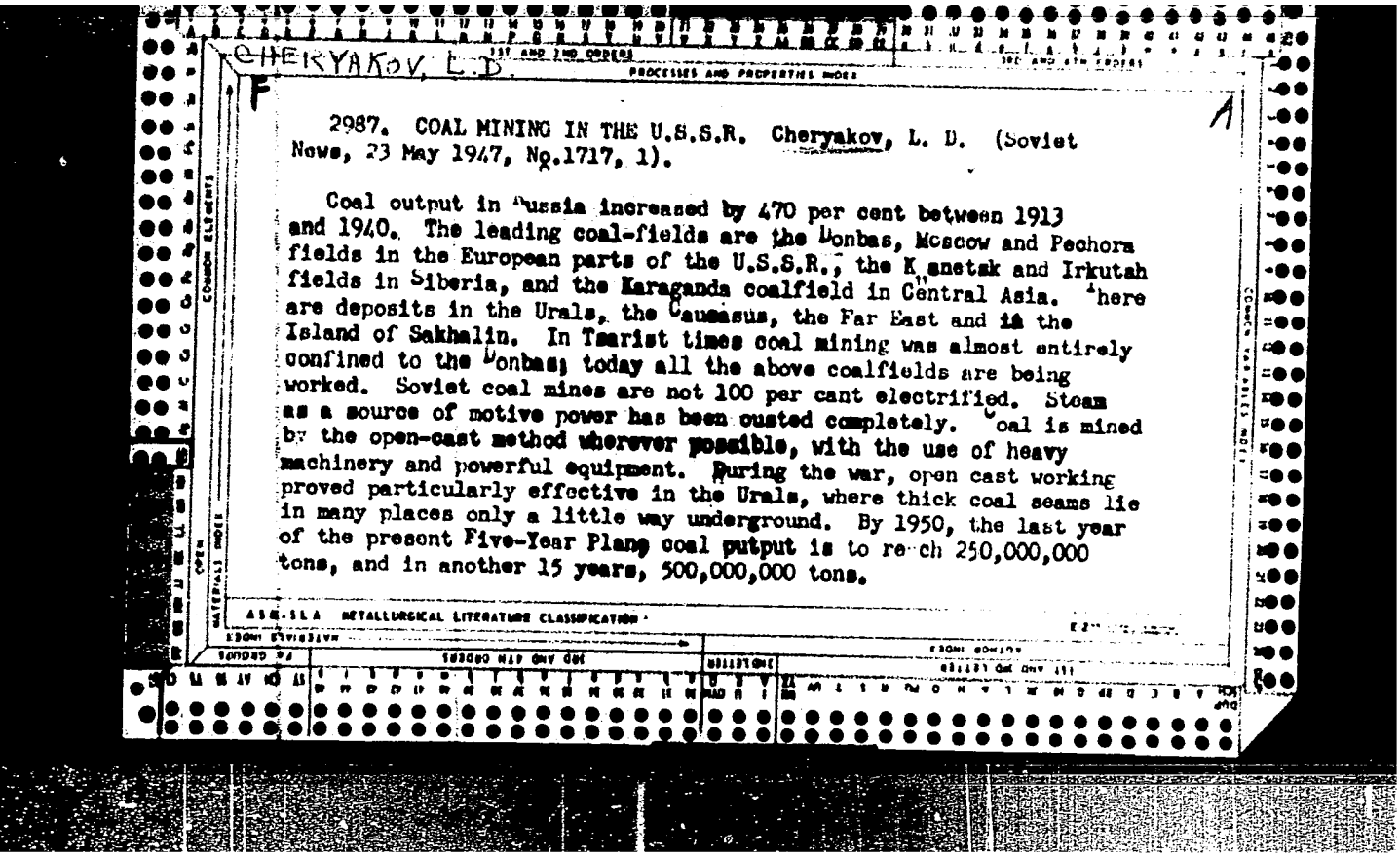
SUB CODE: 07/ SUBM DATE: 06Oct65/ ORIG REF: 003/ OTH REF: 001

Card 2/2 MLP

MITIN, Sergey Andreyevich; IL'IN, V.M., redaktor; LEYKIN, B.P., redaktor; MASLOV, N.A., redaktor; USPENSKIY, V.V., redaktor; CHERYAK, M.Ya., redaktor; GOLERMAN, M.D. redaktor; GUSEVA.S.S.tekhnicheskiy redaktor.

[New wage system in construction work] Novye usloviia oplaty truda v stroitel'stve. Moskva, Gos.izd-vo lit-ry po stroit. i arkhit., 1957. 42 p. (MLRA 10:6)

(Wages)



CHERYAKOV, L. D.

F

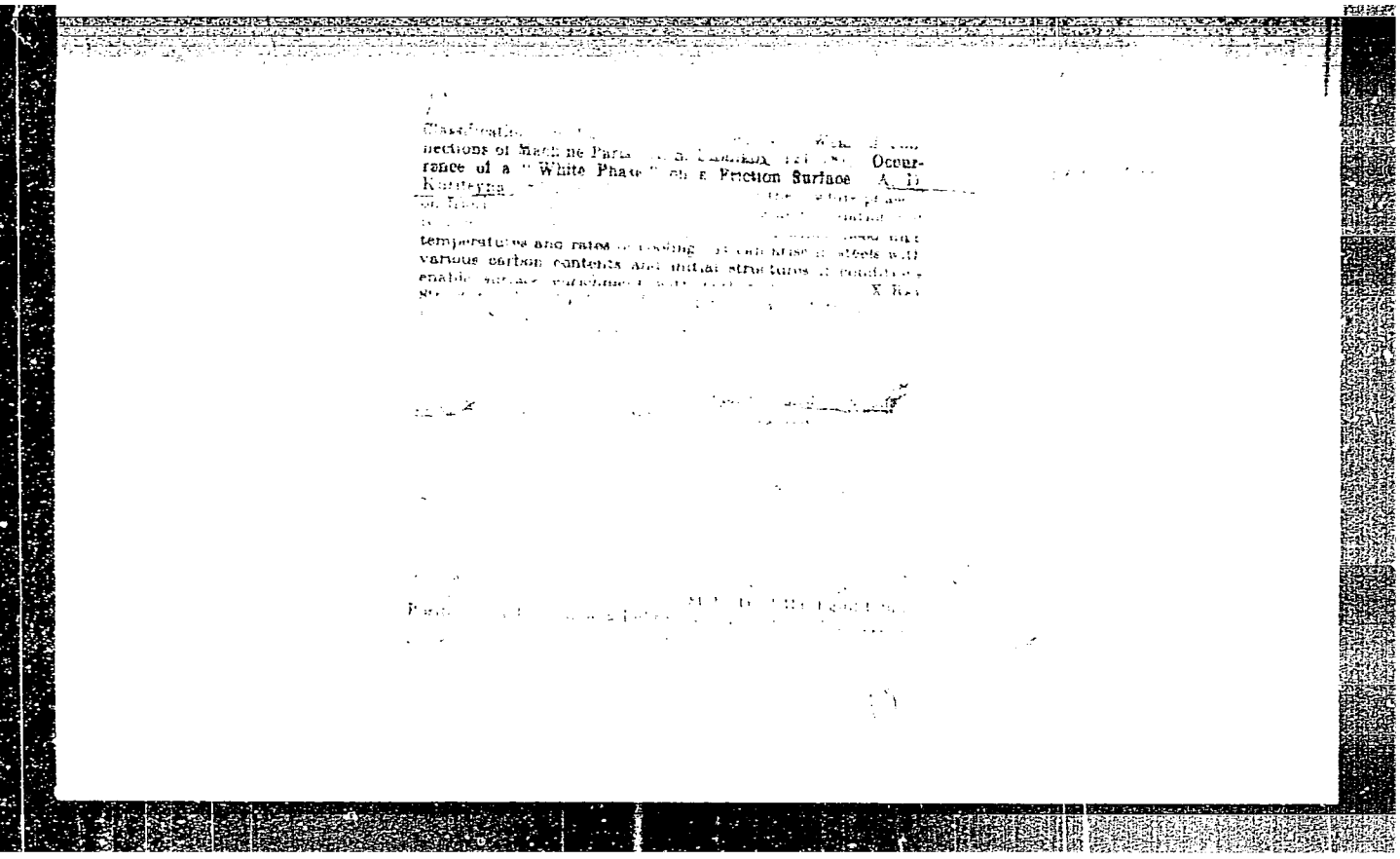
A

2987. COAL MINING IN THE U.S.S.R. Cheryakov, L. D. (Soviet News, 23 May 1947, No.1717, 1).

Coal output in Russia increased by 470 per cent between 1913 and 1940. The leading coal-fields are the Donbas, Moscow and Pechora fields in the European parts of the U.S.S.R., the Kuznetsk and Irkutsk fields in Siberia, and the Karaganda coalfield in Central Asia. There are deposits in the Urals, the Caucasus, the Far East and in the Island of Sakhalin. In Tsarist times coal mining was almost entirely confined to the Donbas; today all the above coalfields are being worked. Soviet coal mines are not 100 per cent electrified. Steam as a source of motive power has been ousted completely. Coal is mined by the open-cast method wherever possible, with the use of heavy machinery and powerful equipment. During the war, open cast working proved particularly effective in the Urals, where thick coal seams lie in many places only a little way underground. By 1950, the last year of the present Five-Year Plan, coal output is to reach 250,000,000 tons, and in another 15 years, 500,000,000 tons.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Friction and Wear in Machines. Collection XI. [illegible] of Sciences of the U.S.S.R., Moscow, 1956, pp. [illegible] Russian). Foreword. M. M. Khrushchov. 3-4. Investigation of the Wear of Metals and Alloys by Friction against an Abrasive Surface. M. M. Khrushchov and M. A. Babichev (5-18). The authors' previous conclusions on the relations between relative resistance to wear and hardness for technically pure metals and heat treated steels have been experimentally confirmed, an exception being silicon. Effects of mechanical working, heat treatment, and other factors have been studied. Investigation of the Effect of the Hardness of an Abrasive and the Wear of Metals. M. M. Khrushchov and M. A. Babichev (19-26). Effect of Some Design Factors on the Wear of Open Bearings Accessible to Abrasive. I. I. Treponenkov and A. M. Chervyapin (27-46). Investigation of the Wear of Linings and Piston Rings on Sludge Pumps. V. S. Lomakin (47-80). Investigation of Corrosion-Abrasive Wear of Steel with Application to Tubes of Water Economiser Boilers. O. N. Muravkin and A. V. Ryabchenkov (81-107). The results of investigations by the Central Research Institute for Technology and Machine Design are described dealing with the dynamics of abrasive wear and gaseous corrosion and with the resistance to wear of various types of surface hardening and protection of boiler tubes. Investigation of the Influence of the Nature of the Porosity of Chromium Plating on the Wear of Cast Iron. D. N. Garkunov and A. A. Polyakov (108-120). This work deals with the quantitative evaluation of the influence of the nature of the porosity of chromium plating on the wear of type PLCh-1 cast iron, and presents a physical picture of the wear of a porous chromium surface layer. Laboratory friction machines were used in the research.



sections of Machine Parts ... Occurrence of a "White Phase" on a Friction Surface ...

temperatures and rates ... various carbon contents ... enable ...

TREPENENKOV, I.I.; CHERYAPIN, A.M.

Effect of some constructional factors on the wear of open joints with access of abrasives. Tren. i izn.mash. no.11:27-46 '56. (MIRA 9:9)

(Mechanical wear) (Tractors)

CHERYAPIN, A.M., kand. tekhn. nauk.

Method of diagramming the engagement of caterpillar sprockets.
Trakt. i sel'khozmash. no.2:7-12 F '58. (MIRA 12:3)

1.Nauchno-issledovatel'skiy avtotraktornyy institut.
(Tracklaying vehicles)

ACC NR: AP7004803 (A) SOURCE CODE: UR/0413/67/000/001/0142/0142

INVENTOR: Cheryapin, A. M.; Pakhomov, A. P.; Beynenson, V. D.

ORG: None

TITLE: A hinge for caterpillar treads on vehicles. Class 63, No. 190227 [announced by the State Union Scientific Research Tractor Institute (Gosudarstvennyy soyuznyy nauchno-issledovatel'skiy traktornyy institut)]

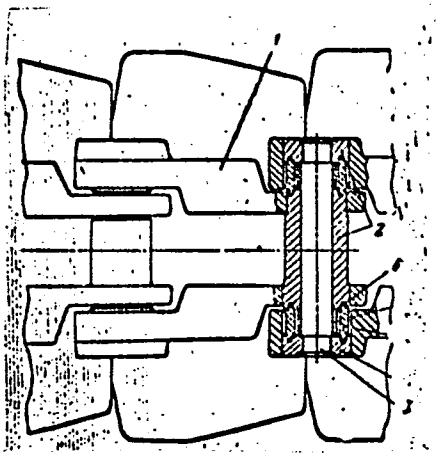
SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1967, 142

TOPIC TAGS: tracked vehicle, vehicle component, transport

ABSTRACT: This Author's Certificate introduces a hinge for caterpillar treads on vehicles. The device contains sleeves mounted in lugs on the tread links, a pin which fits into holes in the sleeves and also spacer rings and sealing rings made from some elastic material such as rubber located between the end surfaces of the sleeves concentric with the pin. To improve seal reliability, the sealing ring is made with annular lugs on the ends which are trapezoidal or triangular in cross section and fit into annular grooves of a corresponding shape on the end surfaces of the sleeves. The sealing ring is installed with clearances relative to the spacing ring and the lug on the tread link.

Card 1/2 UDC: 629.11.012.577

ACC NR: AP7004803



1--caterpillar tread link; 2--sleeve; 3--pin; 4--spacer ring; 5--sealing ring; 6--lugs on the sealing ring

SUB CODE: 13/ SUBM DATE: 2Feb66

Card 2/2

ACC NR: AP6029976 SOURCE CODE: UR/0413/66/000/015/0191/0191

INVENTORS: Smalygin, I. V.; Choryarin, F. N.

ORG: none

TITLE: A metal locator with an inductive detector. Class 21, No. 183845

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 191

TOPIC TAGS: metal inspection, metal test, induced current

ABSTRACT: This Author Certificate presents a metal locator with an inductive detector. The metal locator includes a generator with positive and negative feedback circuits, an amplifier, and an indicator. The design stabilizes the operating conditions of the generator. An automatically regulated negative feedback circuit is used in the locator. This regulated feedback circuit represents a bridge circuit which is inductively connected with the anode circuit of the amplifier. A thermistor is included in one arm of the bridge. A variable resistor is included in the diagonal of the bridge. The variable resistor is connected with the control grid of the generator. To provide remote verification of the working order of the metal locator, a coil is located in the contour coil of the generator. This coil is locked to the resistor by a switch.

SUB CODE: 09, 11 / SUBM DATE: 30May64

Card 1/1 UDC: 621.389:550.83

CHERYGIN, M.M.

GORSHKOV, Georgiy Petrovich, prof.; YAKUSHEVA, Aleksandra Fedorovna, dots.; CHERYGIN, M.M., red.; SHILOVA, K.A., red.; GUR'YANOV, V.P., tekhn. red.

[General geology] Obshchaia geologiia. Pod red. M.M.Charygina. [Moskva] Izd-vo Mosk.univ., 1957. 465 p. (MIRA 11:3)
(Geology)

ACC NR: AP6025645 SOURCE CODE: UR/0413/66/000/013/0095/0096

INVENTOR: Feofanov, N. I.; Cheryukanov, A. S.

ORG: None

TITLE: A method for determining the deviation from conical similarity in the blades of lifting rotors on helicopters. Class 42, No. 183449

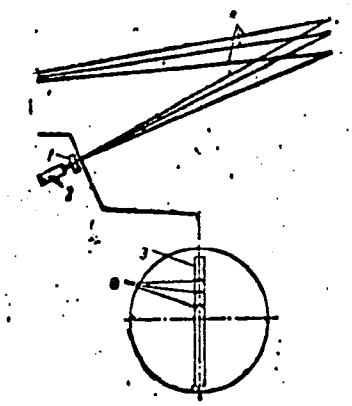
SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 95-96

TOPIC TAGS: helicopter rotor, photomultiplier, measuring instrument

ABSTRACT: This Author's Certificate introduces a method for determining the deviation from conical similarity in the blades of lifting rotors on helicopters. The procedure is designed for improving the reliability, accuracy and possibility of determining deviation from conical similarity on the ground and in flight under any type of illumination. The ends of the rotating blades are projected onto the cathode in a photomultiplier with an automatic slit diaphragm shutter. The pulses at the output from the photomultiplier are compared with pulses produced when the diaphragm slit is completely covered by the projections of the rotating blades of the helicopter rotor to give the degree of deviation from conical similarity.

Card 1/2 UDC: 620.178 629.13.01/06

ACC NR: AP6025645



1—optical system; 2—photomultiplier; 3—slit with diaphragm; 4—rotor blades

SUB CODE: 01, 14/ SUBM DATE: 02Apr65

Card 2/2

CHERZIN, V.A.

Taking heaving into account in designing high pile foundations. Transp. stroi. 8 no.1:19-22 Ja '58. (MIRA 12:12)

1.Glavnyy inzhener Mostostroya No.6.
(Bridges--Foundations and piers)

M

Country : USSR
Category: Cultivated Plants. Commercial. Oil-Bearing. Sugar-Bearing.

Abs Jour: RZhBiol., No 22, 1958, No 100385

Author : Cherzor, A.
Inst :
Title : On the Fall Seeding of Sunflowers.

Orig Pub: S.kh. Bashkirii, 1957, No 9, 20-21

Abstract: The fall seedings of sunflowers (in comparison with the spring ones) produce higher yields of seeds of a better quality. In addition, they reduce the pressure of the spring field work. In order to obtain good results from the fall seeding the following are necessary:

Card : 1/2

CHESACHENKO, V. F.

"Stability of Long-Distance Transmission of Electric Power Employing Intermediate Synchronous Compensators." Acad. Sci. USSR, Power Inst. imeni G. M. Krzhizhanovskiy, Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

AUTHOR: Chesachenko, V.F. (Moscow) SOV/24-58-4-32/39

TITLE: On the Locus of the Stator Current of a Synchronous Machine (O geometricheskom meste toka statora sinkhronnoy mashiny)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, pp 147 - 148 (USSR)

ABSTRACT: For a salient machine working directly on busbars of infinite power, the locus of the stator current is known - it is a Pascal spiral (Refs 1, 2). Here, a more complete analytic expression is obtained for the locus of the stator current of a synchronous machine working through the line of a four-pole on busbars of infinite power (Figure 1). It is also shown that the stator current vector, on variation of the load on the machine, can describe not only the Pascal spiral, which is well known, in the theory of synchronous machines, but also an ellipse.
The equation for the voltages in the stator of a synchronous machine in co-ordinates (dq) is:

$$U_1 = E_d - j(i_d x_d + j i_q x_q) - r(i_d + j i_q) \qquad (1).$$

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On the Locus of the Stator Current of a Synchronous Machine

From the pair of equations for the four-pole, a relation is found between the voltage $\underline{U}_1$ at the terminals of the generator and the voltage $\underline{U}$ of the busbars of infinite power:

$$\underline{U}_1\underline{D} - \underline{I}\underline{B} = \underline{U} \qquad (2) .$$

The voltage $\underline{U}_1$ is eliminated from Eq (1) using Eq (2). Then:

$$\underline{U} = \underline{D}\underline{E}_d - j\underline{B}_q i_q - \underline{B}_d i_d \qquad (3)$$

where:

$$\underline{B}_q = (r + jx_q)\underline{D} + \underline{B} , \quad \underline{B}_d = (r + jx_d)\underline{D} + \underline{B} .$$

Here, $\underline{B}_q$ is a constant of the equivalent four-pole of the transverse axis of the synchronous machine, $\underline{B}_d$ that for the longitudinal axis of the synchronous machine.

The shortest method of obtaining the current locus is to write Eq (3) in the co-ordinates (fb) . To do this the following transformation is used:

$$\underline{B}_d i_d + j\underline{B}_q i_q = \underline{B}_f \underline{I} + \underline{B}_b \overline{\underline{I}} \qquad (4)$$

where:

$$\underline{I} = i_d + j i_q, \qquad \underline{B}_f = \frac{1}{2}(\underline{B}_d - \underline{B}_q)$$

$$\overline{\underline{I}} = i_d - j i_q \qquad \underline{B}_b = \frac{1}{2}(\underline{B}_d + \underline{B}_q) .$$

Taking Eq (4) into account, Eq (3) can be written:

$$\underline{U} = \underline{D}\underline{E}_d - \underline{B}_f \underline{I} - \underline{B}_b \overline{\underline{I}} \qquad (5) .$$

The conjugate of Eq (5) is

$$\overline{\underline{U}} = \overline{\underline{D}\underline{E}}_d - \overline{\underline{B}}_f \overline{\underline{I}} - \overline{\underline{B}}\underline{I} \qquad (6)$$

On the Locus of the Stator Current of a Synchronous Machine

and from Eqs (5) and (6) the stator current vector $\underline{I}$ of the synchronous machine is:

$$\underline{I} = \frac{\underline{B}_f(\underline{DE}_d - \underline{U}) - \underline{B}_b(\overline{\underline{DE}}_d - \overline{\underline{U}})}{\underline{B}_f\overline{\underline{B}}_f - \underline{B}_b\overline{\underline{B}}_b} \qquad (7)$$

If the emf vector $\underline{E}_d$ of the generator in the no-load state is taken along the imaginary axis in the complex plane, then the locus of the stator current of the synchronous machine is an ellipse. If the voltage vector $\underline{U}$ of the busbars of infinite power is taken along the imaginary axis on the complex plane, the locus of the stator current is a Pascal spiral. In the first case $\underline{E}_d = j\underline{E}_d$. Then $\underline{U} = U \exp j(\pi/2 - \delta)$. Taking this into account, after transformation there is obtained:

Card4/6

On the Locus of the Stator Current of a Synchronous Machine

$$I \exp j\,(\pi/2 - \psi) = \underline{mE}_d + U(\underline{r}_1 e^{j\delta} + \underline{r}_2 e^{-j\delta}) \quad (8) .$$

The locus corresponding to Eq (8) (an ellipse) is shown in Figure 2. In this figure

$$\underline{R} = U(\underline{r}_1 e^{j\delta} + \underline{r}_2 e^{-j\delta}) .$$

To obtain the second case, it is sufficient to rotate the vectors in Eq (8) through an angle δ anticlockwise. Then the locus is the Pascal spiral given by:

$$I \exp j\,(\pi/2 - \varphi) = \underline{mE}_d e^{j\delta} + U(\underline{r}_1 e^{j2\delta} + \underline{r}_2) \quad (9) .$$

Card5/6

On the Locus of the Stator Current of a Synchronous Machine

The locus corresponding to Eq (9) is shown in Figure 3. In Eqs (8) and (9):

$$\underline{m} = j\frac{\underline{B}_f\underline{D} + \underline{B}_b\underline{D}}{B_f^2 - B_b^2}$$

$$\underline{r}_1 = -j\frac{\underline{B}_b}{B_f^2 - B_b^2}2$$

$$\underline{r}_2 = -j\frac{\underline{B}_f}{B_f^2 - B_b^2}$$

This is a complete translation. There are 3 figures and 3 references, 2 of which are Soviet and 1 English.

SUBMITTED: August 23, 1957

Card6/6

SOV/105-58-7-19/32

AUTHORS: 1) Matyukhin, V. M., Candidate of Technical Sciences
2) Tsukernik, L. V., Candidate of Technical Sciences
3) Chesachenko, V. F., Candidate of Technical Sciences

TITLE: On Dynamic Models of Energy Systems (O dinamicheskikh modelyakh energosistem)

PERIODICAL: Elektrichestvo, 1958, Nr 7, pp. 74 - 76 (USSR)

ABSTRACT: This work comments upon the article written by I. S. Bruk in Elektrichestvo, 1958, Nr 2. 1) The suitability of approximated molding on noncomplex models is not denied. However, in the modelling of complicated energy systems, the situation is different. All fineness of control and of corresponding transition processes in the equivalent generator disappear in this case. There are innumerable possibilities of improving computers. Electrodynamical models, however, are to certain extent "a chapter for themselves" and therefore the money spent for their improvement will hardly be worth[redacted]. Bruk does not mention the rôle played by theory. It is just by mathematical analysis that results may be ob-

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tained which cannot be obtained either on a dynamical model or by means of a calculating machine. 2) Tsukernik is of the opinion that both life and experience have already solved the problem. The technique of calculating will increasingly extend in the case of scientific- and projecting work, whereas dynamic modelling with respect to its nature is similar to experimenting in laboratories. Instead of comparing the two, it would be better to use them together. The Institute of Electro-Engineering AS UkrainianSSR established an industrial plant in collaboration with the Kiyevenergo which produces an approximate model of the line of the Hydroelectric Generating Station Kuybyshev - Moscow - with 1750 kW. 3) When a great number of calculating machines for the investigation of complicated energy-systems will be available for operation and projection, investigations will be carried out on machines actually available and on electron-analyzers. As long as this is not the case, dynamic models will have to be used. There are 6 references, 5 of which are Soviet.

On Dynamic Models of Energy Systems SOV/ 105-58-7-19/32

ASSOCIATION: 1) i 3) Energeticheskiy institut im. Krzhizhanovskogo Akademii nauk SSSR (1) and 3) Institute of Power Engineering imeni Krzhizhanovskiy AS USSR)
2) Institut elektrotekhniki Akademii nauk USSR
(2) Institute of Electro-Engineering, AS UkrSSR)

1. Power plants--Design 2. Mathematical computers--Applications

Card 3/3

CHESACHENKO, V.F., kand.tekhn.nauk

Parameters, static characteristics, and stability of synchronous generators with ionic self-excitation. Elektrichestvo no.1:22-29 Ja '61. (MIRA 14:4)

1. Energeticheskiy institut AN SSSR.
(Electric generators)

BEREZHNOY, Ye.F. (Moskva); CHESACHENKO, V.F. (Moskva)

Resynchronization of synchronous generators with weak damping moments.
Izv.AN SSSR.Otd tekh.nauk.Energ.i avtom. no.2:15-21 Mr-Ap '61.
(MIRA 14:4)

(Electric generators)

S/105/62/000/003/001/003
E140/E435

AUTHOR: Chesachenko, V.F., Candidate of Technical Sciences

TITLE: The use of an electronic digital computer for the study of resynchronization of alternators in complex power grids

PERIODICAL: Elektrichestvo, no.3, 1962, 15-20

TEXT: The author considers the problem of calculating the performance of a simple power grid with six alternators at separate locations, when an alternator which has fallen out of synchronism is resynchronized under excitation. It is found that if substantial simplifications are not introduced, the equations derived for this problem are too complicated for the solution in a reasonable time on the Ural-2 machine of the VTs AS USSR by the Runge-Kutta method. For example, the instantaneous values of the relative angles δ_{ik} are replaced by their average values during the entire resynchronization period. When the computed solutions indicated that the entire system rapidly goes out of synchronism when actual machine parameters are used in the program, certain parameters (moments of inertia) were arbitrarily increased by a

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factor of three. A flow chart of the program is given; it is stated to contain 290 instructions, with an integration step of 0.005 sec. The running time was 50 minutes. Even under the conditions described, the author concludes that the use of a computer is very effective for the study of power systems and gives certain recommendations for resynchronization on the basis of the results found. The phenomenon of passage through resonance of rotor oscillations in machines resynchronized under excitation causes other machines in the system to fall out of synchronism, particularly the "light" machines (synchronous condensers and rolling mill motors). Therefore, the machine should be resynchronized with the excitation cut off or with the use of mechanical or hydraulic damping (braking). Further studies on dynamic models and in actual power systems are recommended. There are 5 figures and 1 table.

ASSOCIATION: ENIN im. Krzhizhanovskogo

CHESACHENKO, V.F. (Moskva)

Equations of the dynamic stability of a complex power system for computations using electronic digital computers. Izv. AN SSSR. Energ. i transp. no.6:683-693 N-D '63.
(MIRA 17:1)

ACC NR: AP7009568 SOURCE CODE: UR/0281/66/000/006/0019/0024

AUTHOR: Chesachenko, V. F. (Moscow)

ORG: none

TITLE: Equations of the electromagnetic processes in a powerful controlled reactor

SOURCE: AN SSSR. Izvestiya. Energetika i transport, no. 6, 1966, 19-24

TOPIC TAGS: nuclear reactor characteristic, volt ampere characteristic

SUB CODE: 18,09

ABSTRACT: Equations are produced (in synchronously revolving coordinates d_s c_s) for the electromagnetic processes in a three-phase controlled reactor on the basis of the equations for the stator of an asynchronous motor and the set of volt-ampere statistical characteristics of a typical reactor. These characteristics are expressed conveniently for analysis and calculation using empirical dependences. The differential equations produced can be used for investigation of a static and dynamic stability of power systems, as they make up the complete system of equations of the electromagnetic processes taking place in a controlled reactor. Orig. art. has: 4 figures and 4 formulas.

[JPRS: 40,102]

LEVIN, S.; RYZHENKO, D.; BROMBERG, R.; KUZNETSOV, I.; CHESAK, V.; ZOLOTUKHINA, G.

Some results of the work of metallurgical plants under the new conditions. Sots.trud 4 no.9:53-59 S '59. (MIRA 13:1)
(Steel industry--Production standards)

SHTETS, K.A.; SAMET, I.M.; CHESAK, V.N.

Economic efficiency of the automatic control of open-hearth furnace plants. Izv. vys. ucheb. zav.; chern. met. 6 no.8: 185-191 '63. (MIRA 16:11)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut.

SMIRNOV, K.A.; SAMET, I.M.; CHESAK, V.N.

Optimum campaign length of an open-hearth furnace. Izv. vys. ucheb. zav.; chern. met. 7 no.8:208-212 '64. (MIRA 17:9)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut.

ANDREYEV, I.V.; GANZBURG, M.D.; SOBOLEVSKIY, A.G.; CHESAKOV, S.F.; SINEL'NIKOVA, TS.B., red.; MAMONTOVA, N.N., tekhn. red.

[Radio consumer goods]Radiotovary; spravochnik. Leningrad, Gostorgizdat, 1962. 211 p. (MIRA 15:12)
(Radio--Equipment and supplies) (Phonograph)
(Television)

CHESAKOVA, V.D.

Leather utilization in centralized clicking. Kozh.-obuv. prom. 6 no.5:21-23 My '64. (MIRA 17:12)

CA
CHESALIN, G.A.

15H

Chemical methods of combating weeds in grain fields. N. S. Sobolev and G. A. Chesalin. *Sovet Agron.* (U.S.S.R.) No. 5, 10-23(1951).—A report on the control of weeds chiefly by the Na salt of 2,4-D and 2M-4X (2-methyl-4-chlorophenoxyacetic acid). These prepns. are compared with dinitrocresol and dinitrophenol, which act only on the plant organs that are coated with these reagents. All of these prepns. were tested on grains (oats, rye, barley, wheat) and other crops, such as alfalfa, clover, and buckwheat. Applications of more than 1.5 kg./ha. of 2,4D and 2M-4X depressed crop yield. Buckwheat is more sensitive to the reagents than oats or wheat. The other herbicides were effective at 3-5 kg./ha. J. S. Joffe

CHEGALIN, G. A.

Mery bor'by s sornymi rasteniyami (Methods of weed control) Moskva, Izd-vo "Znaniye,", 1953.
3¼ p. illus
Bibliographical footnotes.

SO: N/5
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CHESALIN, G.A.

USSR/Chemical Technology -- Chemical Products and Their Application. Pesticides, I-7

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1497

Author: Chesalin, G. A.

Institution: None

Title: Report on the Conference on Herbicides

Original Periodical: Zemledlie, 1956, No 6, 123-125

Abstract: A brief report on the conference on herbicides organized by the Ministry of Agriculture of the Russian SSR.

Card 1/1

CHESALIN G. A.

USSR /Chemical Technology. Chemical Products and Their Application I-10

Pesticides

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31348

Author : Chesalin G.A.

Inst : All-Union Scientific Research Institute of Fertilizers and Agrologic Soil Science

Title : Chemical Means for the Control of Smartweed

Orig Pub: Byul. nauch.-tekhn. inform. Vses. n.-i. in-t udobr. i agropochvoved., 1956, No 2, 34-40

Abstract: To control smartweed (SW) tests were carried out with ammonium dinitro-phenolate, butyl ester of 2,4-D (I), and Na-salt of 2,4-D. On SW growing

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USSR /Chemical Technology. Chemical Products and Their Application I-10

Pesticides

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31348

outside of crops best results were obtained with I, at dosages of 0.6-1.5 kg/hectare. To control SW in grain fields I must be used at a dosage of 0.4 kg/hectare, followed by a treatment of fallow with higher dosages of I.

Card 2/2

CHESALIN, G.A.

[Weed control] Bor'ba s sornniakami. Moskva, Gos. izd-vo selkhoz lit-ry, 1957. 133 p. (MIRA 10:11)
(Weed control)

CHESALIN, Grigoriy Alekseyevich, kand.sel'skokhozyaystvennykh nauk; KATSNEL'SON, S.A., red.; GUBIN, M.I., tekhn.red.

[The chemical method of weed control] Khimicheskii metod bor'by s sorniakami. Moskva, Izd-vo "Znanie," 1957. 31 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.5, no.26) (MIRA 11:1)

(Weed control)

N

USSR/Weeds and Weed Control

Abs Jour : Ref Zhur - Biol., No 9, 1958, No 39612

Author : Cheselin G...
Inst : All Union Scientific Research Inst. on Fertilization and Agro-Soil Science
Title : Chemical Method of Weed Control

Orig Pub : Kukuruza, 1957, No 3, 35-38

Abstract : Experiments showed that the 2-5 leaf phase of corn (10-20 cm height) is the optimal time for after-sprouting treatment of sowings with 2,4-D in doses 0.5-0.75 kg/ha (of acid equivalent). This study was conducted by the All Union scientific research institute on fertilization and agro-soil science. The preparation totally destroyed lamb's quarters, hemp nettles, simple amaranths, Canada thistle, common wormwood, field thistle - were considerably affected by it. The mixture of 2,4-D (0.6 kg/ha) with mineral fertilizers (10 kg Naa and 15 kg Pc) was applied on corn sowings in phase of 3-4 leaves

Card : 1/2

CHESALIN, G.A.

[Weed control] Bor'ba s sornjakami. Moskva, Gos. izd-vo selkhoz lit-ry, 1958. 134 p. (MIRA 11:11)
(Weed control)

CHESALIN, G.A.

[Weed control] Bor'ba s sornisakami. Izd.3., dop. i ispr. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1959. 133 p. (Weed control) (MIRA 13:6)

CHESALIN, G.A. , kand.sel'skokhoz.nauk

Promising herbicide for controlling weeds on corn fields.
Agrobiologiia no.3:436-439 My-Je '59. (MIRA 12:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya, laboratoriya po primeneniyu gerbitsidov.
(Triazine) (Weed control)

MENSHUTIN, A.I.; CHESALIN, G.A.

Information and brief news. Zashch.rast.ot vred.i bol. 4
no.3:57-58 My-Je '59. (MIRA 13:4)
(Plants, Protection of)

SHIPINOV, N.A.; CHESALIN, G.A.

Atrazine. Zashch. rast. ot vred. i bol. 5 no.4:37-38 Ap '60.
(MIRA 13:9)

(Triazine)

CHESALIN, G.; LADONIN, F.

Effectiveness of using herbicides. Vop. ekon. no.11:86-90 N '61. (MIRA 14:11)

(Herbicides)

CHESALIN, G.A., kand.sel'skokhozyaystvennykh nauk

Chemical control of gramineous weeds. Agrobiologiia no.2:273-282 Mr-Ap '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya, Moskva.
(Weeds) (Herbicides)

CHESALIN, G.A., kand.sel'skokhozyaystvennykh nauk; LADONIN, V.F., kand. sel'skokhozyaystvennykh nauk; KHABIBRAKHMANOV, Kh.Kh.

Chemical control of weeds in green fallows. Zemledelie 24 no.5:58-66 My '62. (MIRA 15:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya.

(Weed control)
(Fallowing)

CHESALIN, Grigoriy Alekseyevich, kand. sel'khoz. nauk; BLOKHINA, V.V., red.; BELOVA, N.N., tekhn. red.; OKOLELOVA, Z.P., tekhn. red.

[Cultivation and chemical measures in weed control] Agrotekhnicheskie i khimicheskie mery bor'by s sorniakami. Moskva, Sel'khozizdat, 1963. 214 p. (MIRA 16:12)
(Weed control)

CHESALIN, G.A., kand. sel'skokhoz. nauk; YURINA, N.V.

Effectiveness of chemical weed control among certain vegetable crops. Agrobiologiia no.4:599-608 Jl-Ag '64. (MIRA 17:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya.

CHESALIN, G.A., kand. sel'skokhoz. nauk

Chemical method for the control of weed plants. Zemledelie 26 no.12: 29-34 D '64. (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya.

PEYVE, Ya.V.; PETERBURGSKIY, A.V., doktor sel'khoz. nauk, prof.; GAR, K.A., kand. sel'khoz. nauk; GOLYSHIN, N.M., kand. biol. nauk; KOROTKIKH, G.I., kand. sel'khoz. nauk; CHESALIN, G.A., kand.sel'khoz.nauk; RAKITIN, Yu.V., doktor biol. nauk; ZEZYULINSKIY, V.M., kand. sel'khoz.nauk; DEVYATKIN, A.I., kand. sel'khoz. nauk; VENEDIKTOV, A.M., kand.sel'khoz. nauk; TARANOV, M.G., kand. biol. nauk; BORISOVA, L.G.; BEREZNIKOV, V.V., kand. tekhn.nauk; KONDRATENKO, R.V., st. nauchn.sotr.; BORISOV, F.B., st. nauchn.sotr.

[Chemistry in agriculture] Khimiia v sel'skom khoziaistve. Moskva, Kolos, 1964. 381 p. (MIRA 17:9)

1. Chlen-korrespondent AN SSSR (for Peyve). 2. Nachal'nik laboratorii Nauchno-issledovatel'skogo instituta plastmass (for Borisova). 3. Nauchno-issledovatel'skiy institut plastmass (for Kondratenko, Borisov).

ACCESSION NR: AT4042278 S/0000/63/003/000/0017/0022

AUTHOR: Sy*rovatskiy, S. I., Chesalin, L. S.

TITLE: Electromagnetic excitation of a conducting fluid flow near bodies and the exclusion force.

SOURCE: Soveshchaniye po teoreticheskoy i prikladnoy magnitnoy gidrodinamike. 3d, Riga, 1962. Voprosy* magnitnoy gidrodinamiki (Problems in magnetic hydrodynamics); doklady* soveshchaniya, v. 3. Riga, Izd-vo AN LatSSR, 1963, 17-22

TOPIC TAGS: turbulent flow, conducting fluid flow, electromagnetic flow excitation, exclusion force, infinite cylinder problem, sphere problem, arbitrary field orientation, hydromagnetics

ABSTRACT: The authors present a simple method for solving problems on the turbulent flow of a conducting fluid and the forces acting on bodies placed in the flow, where the conductivity of flow and body are not equal. The basic problem involves flow of an incompressible fluid, and the summary forces acting on a body in it are expressed as

$$F = \int_{\Sigma} p n dS - \int_{\Sigma} \sigma'_n dS + \frac{1}{c} \int_{V} [j, h] dV, \quad (1)$$

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ACCESSION NR: AT4042278

where p = pressure, j = current density, v = velocity, h = magnetic field, n = inside normal to surface, $\sigma'_n = \{\sigma'_{ik} n_k\}$ and σ'_{ik} = viscous stress tensor. The solution is then exemplified for an infinite cylinder, arbitrarily oriented in relation to current density and magnetic field, and for a sphere. Orig. art. has: 30 equations.

ASSOCIATION: none

SUBMITTED: 04Dec63 ENCL: 00

SUB CODE: ME NO REF SOV: 001 OTHER: 001

Card 2/2

L 6210-65 EWT(l)/FCC/EEC(t) Pc-4/Pr-4 IM

ACCESSION NR: AP5015669 UR/0293/65/003/003/0408/0425
550.385.41(047)

AUTHORS: Pletnev, V. D.; Skuridin, G. A.; Chesalin, L. S.

TITLE: Dynamics of the geomagnetic trap. I

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 3, 1965, 408-425

TOPIC TAGS: geomagnetic field, dynamic behavior, magnetic storm, radiation belt, aurora, space probe / Pioneer I, Pioneer V, Explorer XVIII, Explorer X, Explorer XII, Explorer XIV

ABSTRACT: The basic experimental data and the theoretical concepts concerning the geophysical phenomena occurring in space around the earth are considered. It is shown that such phenomena as magnetic storms, the aurora, radiation belts, and the finite sphere of the earth's magnetic field must be studied from some common viewpoint, since they are all intimately related. This complex of geophysical phenomena is called the dynamics of the geomagnetic trap. The present paper, containing only the first part of the study, is devoted to experimental data on the interaction of charged particles and the geomagnetic field and to some theoretical aspects of solving this problem. In seeking to define the shape of the earth's

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